

8. Revision of the Lepidopterous Genus *Teracolus*, with Descriptions of the new Species. By ARTHUR GARDINER BUTLER, F.L.S., F.Z.S.

[Received December 8, 1875.]

(Plates VI. & VII.)

The Butterflies treated of in the present paper, although admitted by all to be very pretty, are by no means favourite objects of study with the lepidopterist.

Whenever a genus is composed of striking and, at the same time, sharply defined species, plenty of entomologists are always ready to work at it; but when, as in the present instance, there is some difficulty in ascertaining the amount of variation obtaining in the different species, it will be found that lepidopterists are not unfrequently content to catalogue all doubtful forms as varieties of known species, often giving to the world a false view of their geographical distribution, and thus hindering instead of advancing science.

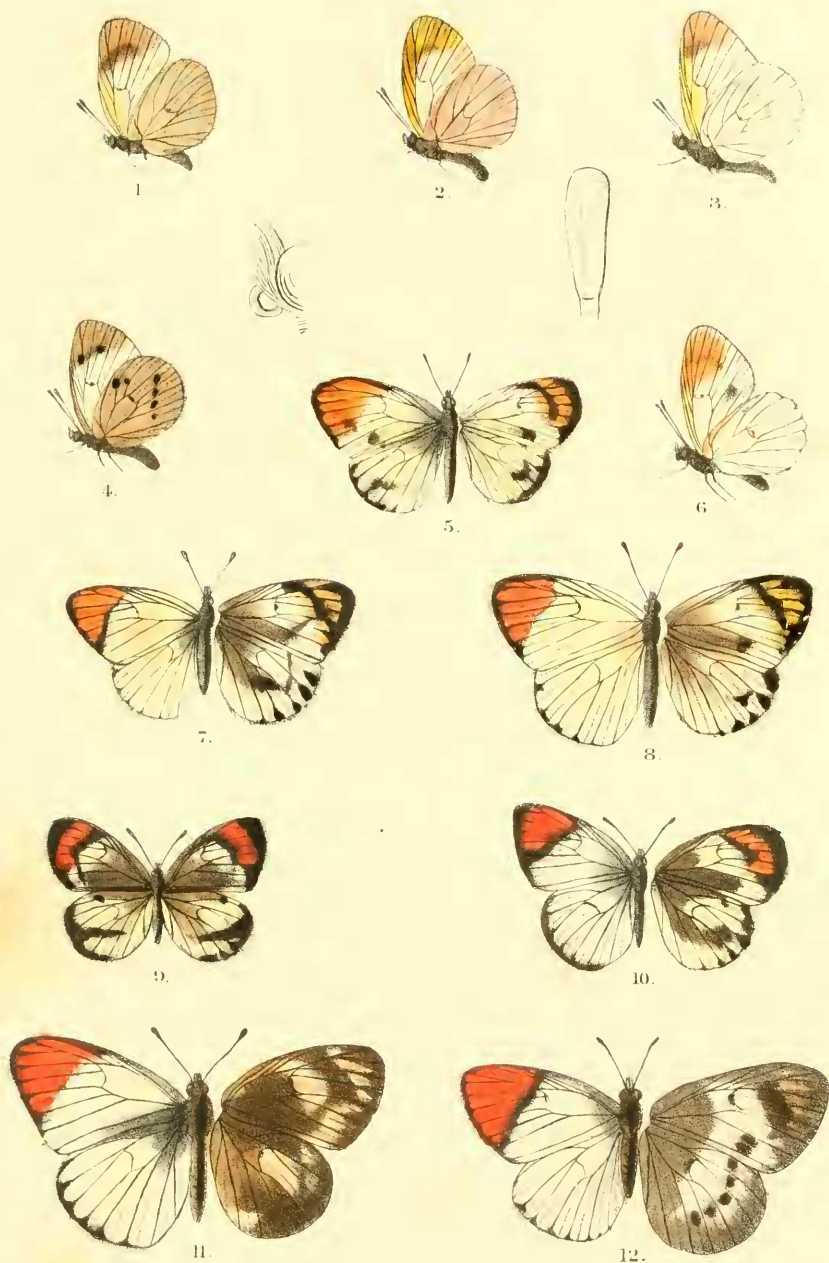
The genus *Teracolus* was first founded by Swainson, in his 'Zoological Illustrations,' for the reception of his *T. subfasciatus*. But a few years since I extended it for the reception of all the insects formerly constituting the genera *Idmais* and *Callosune*, there being no reason, but that afforded by colour, why they should ever have been kept separate.

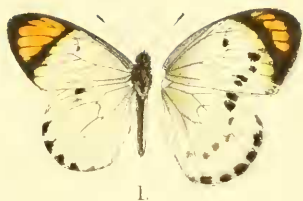
Until quite recently I was unable, from lack of adequate material, to attempt a revision of this very difficult group; but the kindness of Mr. E. C. Buxton, in presenting to the Museum his valuable collection of African "Orange-tips," has at length put me into a fair position to work out the whole of the African species.

In order to make the present paper more complete, Mr. F. Moore has very generously lent me the whole of his Indian specimens, thus enabling me to avoid errors in determining the Asiatic species—our deficiencies in Syrian forms being also partially met by the assistance of my friend R. Meldola, who has put into my hands several species collected by the late Mr. J. K. Lord.

It would be easy to show that the present genus contains but few, if any, very sharply defined species. It is not improbable that, when we know the Butterflies of East Africa, Arabia, Syria, and Persia more thoroughly, we shall be able to show an unbroken gradation from one end of the group to the other. At present we get a nearly perfect transitional series from *T. subfasciatus* to *T. ione*, thence through *T. halimede* to *T. fausta*, *calais*, and allies, on the one hand, and to *T. eupompe* and allies on the other; from the latter we can run on, almost without a break, through *T. eucharis* to *T. interruptus*, and thence to *T. evippe*.

If the plan of "lumping" species were to be adopted in this genus, every year would probably decrease instead of adding to their num-





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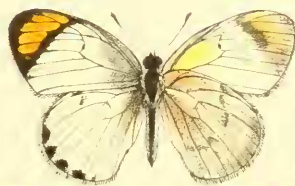
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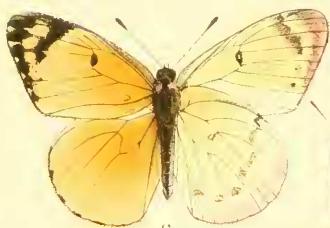
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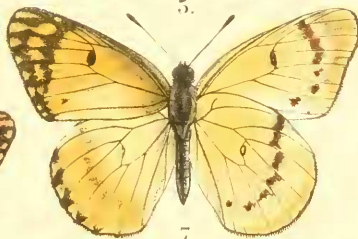
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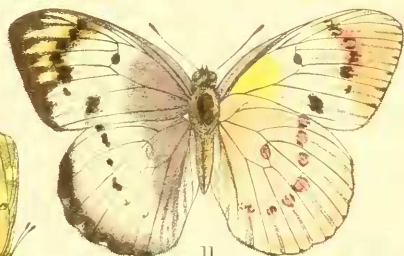
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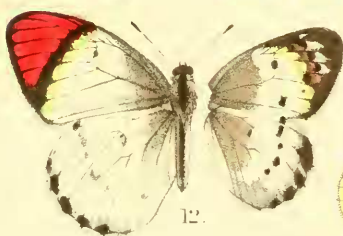
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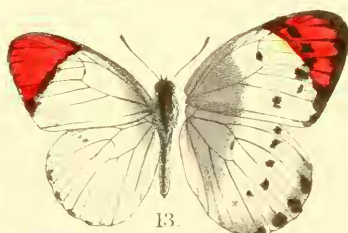
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ber, until eventually we should be compelled to recognize but one species in the genus, a consummation certainly not to be desired. At present nobody doubts the existence of numerous species. Kirby's Catalogue, which gives what is styled "the broad view," inasmuch as it allows almost unlimited latitude for variation, enumerates 14 species under *Idmais*, 4 under *Teracolus*, and 53 under *Callosune*, 71 in all*. It being, therefore, impossible to be certain, without careful breeding from the egg, of the limits of any species in this genus, I have taken the only course open to me, and have described all the forms which seemed, in both sexes, to present constant distinctive characters, or which differed sufficiently, as single specimens, to warrant the belief that they were not varieties of known species.

1. *Wings sulphur-yellow or white, the apex of primaries dark, and traversed in both sexes by pale spots: wings of male below nearly uniform in tint, sometimes with a few black spots, of female more or less tinted with buff, the disk crossed by an irregular series of dark spots.* *Teracolus*, Swainson.

1 a. *Wings of male uniformly yellow, apical patch of primaries black internally; apical spots confluent; wings below greenish white; apex of primaries and secondaries reticulated with pale greyish brown.* *T. subfasciatus*, Swainson.

1. TERACOLUS SUBFASCIATUS.

Teracolus subfasciatus, Swainson, Zool. Ill. Ins. ii. pl. 115 (1823).

Anthocharis subfasciata, Boisduval, Sp. Gén. Léop. i. p. 567. n. 12 (1836).

Ptychopteryx bohemani, Wallengren, Lep. Rhop. Caffr. p. 18 (1857).

Damara Land (*Trimen*).

B.M.

1 b. *A black streak on inner margin of primaries, broad in the male, and uniting with a broad black outer marginal border.* *T. eris*, Klug.

2. TERACOLUS ERIS.

Pontia eris, Klug, Symb. Phys. pl. 6. figs. 15, 16 (1829).

Pieris eris, Boisduval, Sp. Gén. Léop. i. p. 514. n. 111 (1836).

Anthocharis eris, Reiche, Ferret & Galinier, Voy. Abyss. Ent. p. 460, pl. 31. figs. 1-3 (1849).

Idmais eris, Kirby, Syn. Cat. p. 499. n. 12 (1871).

♂ ♀, Ambriz (*J. J. Monteiro*); ♂ ♀, S. Africa (*E. C. Buxton*).

B.M.

The ground-colour of the wings of the female is either white, as in the male, or bright sulphur-yellow.

* It should be observed that several species admitted in the above-mentioned Catalogue are referred by Mr. Kirby to *Pieris*.

1 c. No black streak on inner margin of primaries. *T. fatma*.

3. TERACOLUS FATMA.

Idmais fatma, Felder, Reise der Nov. Lep. ii. p. 189. n. 185, pl. 25. fig. 3 (1865).

Idmais eris, var., Kirby, Syn. Cat. p. 499. n. 12 (1871).

Kordofan.

This species is smaller than *T. eris*, has the external area of primaries tawny, the discal spots disconnected, and no marginal spots on secondaries. I have seen a specimen in Mr. Druce's collection.

4. TERACOLUS COLIAGENES.

Euchloë coliagenes, Butler, Ann. & Mag. Nat. Hist. ser. 3, vol. xx. p. 216, pl. 4. figs. 4, 5 (1867).

Callosune coliagenes, Kirby, Syn. Cat. p. 500. n. 4 (1871).

White Nile (*Petherick*).

Type, B.M.

Precisely like the *T.-fausta* group in pattern, but of a sulphur-yellow colour.

2. *Wings sulphur-yellow, white, or pale ochreous; below with transverse bands across the disk of secondaries.*

2a. Wings yellow, markings above much like the *T.-fausta* group.

5. TERACOLUS PROTOMEDIA.

Pontia protomedia, Klug, Symb. Phys. pl. 8. figs. 13, 14 (1829).

Pieris protomedia, Boisduval, Sp. Gén. Léop. i. p. 509. n. 105 (1836).

Teracolon protomedia, Kirby, Syn. Cat. p. 500. n. 4 (1871).

♂ ♀, White Nile (*Petherick*).

B.M.

The plumule of this species is, as might be expected, like that of the other species of *Teracolon*.

6. TERACOLUS AMELIA.

Idmais amelia, Lucas, Rev. Zool. p. 427 (1852).

Senegal.

Allied to the preceding species.

2b. Wings above pale ochreous and white.

7. TERACOLUS VELLEDA.

Idmais vellela, Lucas, Rev. Zool. p. 428 (1852).

Abyssinia.

Intermediate between *T. amelia* and *T. vesta*.

8. TERACOLUS VESTA.

Idmais vesta, Reiche, Ferret & Galinier, Voy. Abyss. p. 463, pl. 31. figs. 7, 8 (1849).

Caffraria (*Becker*), S. Africa (*E. C. Buxton*).

B.M.

9. TERACOLUS HEWITSONII.

Idmais hewitsonii, Kirby, Syn. Cat. p. 498. n. 4 (1871).

Idmais chrysonome, Doubleday & Hewitson, Gen. Diurn. Lep. pl. 7. fig. 5 (1847).

Idmais vesta, Trimen, Rhop. Afr. Austr. i. p. 62. n. 41 (1862).
Congo (*A. Curror*). Type, B.M.

10. TERACOLUS CHRYSONOME.

Pontia chrysonome, Klug, Symb. Phys. pl. 7. figs. 9-11 (1829).

Idmais chrysonome, Boisduval, Sp. Gén. Léop. i. p. 585. n. 1 (1836)

Congo (*A. Curror*). B.M.

2c. Wings above white; primaries with large purplish crimson apical patch, crossed by a black line.

11. TERACOLUS PHOLOË.

Anthopsyche pholoë, Wallengren, Wien. ent. Monatschr. iv. p. 35. n. 6 (1860).

Callosune pholoë, Kirby, Syn. Cat. p. 504. n. 44 (1871).
Lake Ngami.

12. TERACOLUS AMINA.

Anthocharis amina, Hewitson, Exot. Butt. iii. Anth. pl. 1. figs. 1-3 (1866).

Callosune amina, Kirby, Syn. Cat. p. 500. n. 1 (1871).
Between Natal and Delagoa Bay (*E. C. Buxton*). B.M.

13. TERACOLUS CELIMENE.

Anthocharis celimene, Lucas, Rev. Zool. p. 426 (1852).

Callosune celimene, Kirby, Syn. Cat. p. 504. n. 48 (1871).

Abyssinia.

The three preceding species seem to be nearly allied; and since Hewitson gives the Zambesi as the locality of his type, I feel rather doubtful of their being all distinct.

3. *Wings of the male with purple apex, externally and sometimes internally bordered with black; females with white-spotted or orange tips; secondaries below generally with traces of a transverse oblique brown or blackish line, sometimes obsolete.*

3a. Primaries of male above without black internal limitation of the apical patch; secondaries above and below uniformly white: apical patch of female with a violet gloss.

14. TERACOLUS REGINA.

Anthocharis regina, Trimen, Trans. Ent. Soc. ser. 3, i. p. 520. n. 1 (1863).

Callosune regina, Kirby, Syn. Cat. p. 500. n. 7 (1871).

Damara Land. Type, B.M.

36. Primaries of male with apical patch redder in tint and broader ; secondaries with the veins slightly blackish, and terminating in well-marked black spots.

15. TERACOLUS HETÆRA.

♂, *Callosune hetæra*, Gerstaecker, in Van der Decken's Reisen in Ost-Afrika, p. 365. n. 7, taf. xv. fig. 2 (1873).

Endara.

This species is larger than *T. regina*, and in the marginal spots of secondaries approaches *T. ione* and allies.

- 3c. Primaries of male above without black internal limitation of the apical patch ; secondaries black-veined ; below whitish, with base of costa yellowish, black veins, and an oblique, ill-defined, dotted transverse line : female with apical patch of primaries orange, crossed by black spots ; secondaries white, with marginal blackish spots ; below pinkish ochraceous, with a well-marked, spotted, red-brown, angulated, oblique transverse streak.

16. TERACOLUS PHLEGYAS.

Anthocharis phlegyas, Butler, P. Z. S. 1865, p. 431, pl. 25. figs. 3,

3a (1865).

Callosune phlegyas, Kirby, Syn. Cat. p. 500. n. 5 (1871).

White Nile (*Petherick*).

Type, B.M.

It is possible that this may be the species represented by Reiche (Ferret & Gal. Voy. Abyss. pl. 30) as a variety of *A. ione* ; only it is there represented with a black internal limitation of the apical patch, and with no trace of a cross bar on the under surface of the secondaries.

- 3d. Like the preceding, excepting that the violet apical patch of the male and the orange patch of the female are both larger ; secondaries of male below whitish, with base of costa indistinctly ochraceous, veins below not black : female with outer limitation of apical patch almost obliterated by the orange colouring, the black spots small ; secondaries white, with the marginal spots small ; below very pale brown with the apical area and a well-marked discocellular spot white ; the brown area reticulated with slightly darker hatchings, and limited by an oblique whity-brown streak (not angulated). *T. buxtoni*.

17. TERACOLUS BUXTONI.

Teracolus buxtoni, n. sp., supra.

♂ ♀, Between Natal and Delagoa Bay (*E. C. Buxton*).

Type, B.M.

This is probably the South-African representative of *T. phlegyas*.

- 3e. Size of the preceding two species ; violet apical patch of the male bordered on both sides with black ; secondaries below and apex of primaries with a distinct pink tinge ; costa of secondaries

yellowish towards base; a well-marked oblique brown streak: apical patch of female above black, spotted with white; base dusky; apex below sordid yellowish, crossed by black-and-white spots; secondaries sordid yellowish, reticulated with grey; a black-and-white spot at end of cell; base of costa yellowish; an oblique brown streak as in the male.

18. TERACOLUS JOBINA.

♂ ♀, *Euchloë jobina*, Butler, Cist. Ent. i. p. 14. n. 2 (1869).

Callosune jobina, Kirby, Syst. Cat. p. 504. n. 49 (1871).

♂, *Teracolus jobina*, Butler, Lep. Exot. pl. xliii. fig. 3 (1872).

♂ ♀, Natal (*E. C. Buxton*).

B.M.

The violet patch contains from five to six divisions: in the type in Mr. Druce's collection there are five, the two upper ones being very minute, and all of them being distinctly separated; one example of the three males presented by Mr. Buxton has six divisions, separated only by the black nervures.

3f. Violet apical patch of the male bordered on both sides with black; internal vein and apical two thirds of remaining veins beyond cell of primaries black; basal area and internal two fifths of secondaries dusted with grey; internal area of primaries tinted with sulphur yellow; secondaries with black veins, terminating in black marginal spots: below, the apex of primaries and the secondaries tinted with pink, the latter with an oblique dotted line (composed of four to five small brown spots); base of costa ochraceous. Female with the apical patch orange, bordered with black and crossed by black spots, or black crossed by five white spots: secondaries below pinkish grey or yellowish, reticulated with pale brown, crossed by an oblique brown streak, and with brown outer borders; base of costa sometimes ochreous.

19. TERACOLUS JALONE.

♂, *Euchloë jalone*, Butler, Cist. Ent. i. p. 14. n. 1 (1869).

Callosune jalone, Kirby, Syn. Cat. p. 500. n. 6 (1871).

Teracolus jalone (part.), Butler, Lep. Exot. p. 116 (1872).

Anthocaris ione (sic), Lucas, Lep. Exot. pl. 37. fig. 4 (1835).

♂ ♀, *Anthocharis ione*, Hopffer in Peters's Reise n. Mossamb. Zool. v. p. 357, pl. 21. figs. 1-6 (1862).

♂, White Nile, Coll. Druce, E. Africa?

B.M.

The characters of the females are taken from Hopffer's figures.

3g. Nearly allied to the preceding; violet apical patch of male much larger, more broadly black-bordered; internal vein and apical half of remaining veins beyond cell of primaries, and all the veins of secondaries, black; basal third of primaries and base of secondaries dusted with black, black marginal spots; apical area of primaries and whole of secondaries below cream-coloured; primaries with black dot at end of cell, a black squamose spot

on the margin of the apical area within the lower discoidal interspace, and two marginal spots terminating the first and second median branches; secondaries with the base of costa orange; a black discocellular dot; a broad oblique black bar, interrupted by the nervures from costa to third median, a spot on second median interspace, a dot on first median, and a spot on interno-median interspace, all black. Female with the apical patch orange, bordered with black, and crossed by a broad lunulated black band, or black spotted with yellow; secondaries below either pinkish grey, with a broad, tapering, oblique brown streak, or yellow with a subangulated macular black streak (as in the male); with costa orange, and outer border broadly brown. *T. imperator*.

20. TERACOLUS IMPERATOR.

Anthocharis ione, Reiche, in Ferret & Galinier, Voy. Abyss. pl. 30. figs. 1, 2, 5-7 (1849).

Callosune ione (part.), Kirby, Syn. Cat. p. 500 (1871).

Teracolus jobina (part.), Butler, Lep. Exot. p. 116 (1872).

♂, Senegal (*E. C. Buxton*).

Type, B.M.

- 3*h*. Violet apical patch of male very widely bordered with black; internal vein of primaries white, remaining veins partly black; base densely dusted with grey; veins of secondaries frequently black, but not so distinctly as in the two preceding forms, with terminal black spots; apex of primaries and the whole of secondaries below cream-coloured, with veins dusky; nervures terminating in black dots; black discocellular dots; secondaries below with a black subcostal spot (not a transverse bar). Female with the apical patch orange, bordered with black and crossed by black spots, or black with three decreasing white spots; secondaries below lemon-yellow, partially reticulated with brown, crossed by an oblique brown streak, and two brown spots on first median and interno-median interspaces; discocellular spots well marked.

21. TERACOLUS IONE.

Pieris ione, Godart, Enc. Méth. ix. p. 140. n. 74 (1819).

Anthocharis ione (part.), Boisduval, Sp. Gén. Lép. i. p. 515 (1836).

Callosune ione (part.), Kirby, Syn. Cat. p. 500. n. 3 (1871).

Anthocharis erone, Angas, Kaffirs Illustrated, pl. 30. fig. 3 (1849).

Var. *Anthopsyche speciosa*, Wallengren, Kongl. Svenska Vetensk. Akad. Handl. p. 16 (1857).

♂ ♀, Natal (*Becker, Argent, Burrows, E. C. Buxton*). B.M.

A small male, agreeing with Wallengren's description, is amongst the specimens presented by Mr. Buxton.

- 3*i*. Violet patch of the male only represented by two spots; under surface of secondaries yellow.

22. TERACOLUS EUNOMA.

Pieris eunoma, Hopffer, Ber. Verh. Ak. Berl. p. 640. n. 2 (1855);

Peters, Reise n. Mossamb. Zool. v. p. 353, pl. 23. figs. 1, 2 (1862).

Mozambique.

4. *Wings of male above uniformly sulphur-yellow, with the apex of primaries and a spot at end of cell black; secondaries below yellow, with an interrupted oblique black streak: female pale sulphur-yellow, almost white, with the outer margins broadly black; a black discocellular spot in primaries; secondaries below lemon-yellow, with an angulated black streak.*

23. TERACOLUS MANANHARI.

Pieris mananhari, Ward, Ent. Mo. Mag. vi. p. 224 (1870); Afr. Lep. pl. ii. figs. 1-4 (1873).

Teracolus mananhari, Kirby, Syn. Cat. p. 500. n. 2 (1871).

Madagascar.

This extraordinary species is clearly related to the *T. ione* group, but it is very dissimilar from all the species in the genus.

5. *Wings white, more or less clouded with orange; primaries of the males with grey apical border and black veins.*

5 a. *Wings of male grey at base; orange area restricted and pale.*

24. TERACOLUS HALIMEDE.

Pontia halimede, Klug, Symb. Phys. pl. 7. figs. 12-15 (1829).

Pieris halimede, Boisduval, Sp. Gén. Léop. i. p. 526. n. 129 (1836).

Idmais halimede, Kirby, Syn. Cat. p. 499. n. 13 (1871).

Anthocharis leo, Butler, Ann. Nat. Hist. ser. 3, vol. xvi. p. 397 (1865).

White Nile (*Petherick*).

B.M.

- 5 b. *Wings of male almost entirely covered with deep orange.*

25. TERACOLUS PLEIONE.

Pontia pleione, Klug, Symb. Phys. pl. 8. figs. 7, 8 (1829).

Terias pleione, Boisduval, Sp. Gén. Léop. i. p. 672. n. 33 (1836).

Idmais pleione, Kirby, Syn. Cat. p. 499. n. 14 (1871).

Idmais miriam, Felder, Reise der Nov. Lep. ser. 2, p. 190. n. 186 pl. 27. figs. 3, 4 (1865).

Teracolus chrysomela, Butler, Cist. Ent. p. 244 (1874).

White Nile (*Petherick*).

B.M.

This species is much deeper in colour than Klug represents it to be in his figure; its affinities seem about equally balanced between the two groups, of which *T. fausta* and *T. eupompe* may be considered as typical, the male nearly resembling the former, the female more closely approaching the latter.

The succeeding six species, constituting my Section 6, might perhaps be separated generically from *Teracolus*, inasmuch as the males have an embossed spot on the internal area of primaries near

the base; they could not constitute the genus *Idmais* even in a restricted sense, inasmuch as Boisduval indicates *I. calais* as his type, thus:—

“Nous avons donné primitivement à ce genre le nom de *Calais*, en prenant comme générique le nom de l'espèce la plus connue; mais comme ce changement de nom spécifique en nom générique n'est pas sans inconvénients, nous lui avons substitué celui d'*Idmais*.”

For my part I see little utility in distinguishing a group so manifestly intermediate between the *T. halimede* and *Calais* groups, more especially since the structural distinction is confined to one sex.

6. *Wings entirely orange or white above, with black discocellular spots in primaries, and a maculated black border, expanding in primaries towards the costa, and more or less enclosing a series of orange or white spots.*

26. TERACOLUS FAUSTA.

Papilio fausta, Olivier, Voy. dans l'Emp. Oth., L'Egypte et la Perse, Atlas, pl. 33. figs. 4 a, b (1801).

Pieris fausta, Godart, Enc. Méth. ix. p. 132. n. 41 (1819).

Pontia fausta, Klug, Symb. Phys. pl. 8. figs. 9–12 (1829).

Idmais fausta, Boisduval, Sp. Gén. Léop. i. p. 586. n. 2 (1836).

♂ ♀, Baghdad (*W. K. Loftus*).

B.M.

Mr. Moore has this species from N.W. India.

27. TERACOLUS FAUSTINA.

Idmais faustina, Felder, Reise der Nov. Lep. ii. p. 190. n. 187, (1865).

——?

The colouring of the underside differs from any thing that I have seen; the spots on the disk being lutescent or orange.

28. TERACOLUS ROSACEUS, n. sp. (Plate VII. fig. 6.)

♂. Wings above precisely like dark females of *T. fausta*, excepting that the secondaries have a white patch above the subcostal nervure, and the marginal black spots are linear: wings below pale creamy yellow; primaries with the discocellular spot small, lunate, black, with light centre; apical border rosy, bounded within by six ill-defined spots of the ground-colour, limited by an inner series of decreasing spots, the upper four rusty, the lower two minute and black; secondaries with a pale-centred buff discocellular spot; seven discal spots in a J-shaped series, the first brown, the remainder buff-coloured; outer border rosy; body below creamy-white. Expanse of wings 1 inch 9 lines.

Akote.

Type, coll. F. Moore.

The succeeding species is nearly allied, but seems to me to be distinct.

29. TERACOLUS ORIENS, n. sp. (Plate VII. fig. 7.)

♂. Wings above precisely like dark females of *T. fausta*, ex-

cepting that the secondaries have a white patch above the subcostal nervure: wings below pale yellowish white, slightly rosy towards the base; primaries with the discocellular spot small, elliptical, black, with white centre; apical border pale reddish-orange, bounded within by six ill-defined yellowish spots, limited by an inner series of seven decreasing spots, the upper five rusty-brown, the lower two black; secondaries with a pale-centred rusty discocellular spot; seven discal spots in an irregular arched series, all rusty; outer border pale reddish orange, diffused internally; body below creamy-white. Expanse of wings 1 inch 8 lines.

♀. Altogether paler; primaries with the costa and base cinereous; discocellular spot small, as in the male; apical border dark brown, enclosing six spots internally and seven externally; secondaries with six large subquadrate marginal dark brown spots: wings below creamy sulphur-yellow, rather darker towards the base and on the outer margins; otherwise as in the male. Expanse of wings 2 inches.

♂, Kalka, foot of Himalayas (*Boys*, B.M.). ♀, Kattywar (coll. Moore).

30. TERACOLUS SOLARIS, n. sp.

♂. Wings above like dark females of *T. fausta*, but altogether of a deeper orange-colour, with the costa of primaries ash-coloured, and the discocellular spot much larger; secondaries with a white patch above subcostal: wings below pale creamy yellow, deeper towards the base, the markings as in the preceding species. Expanse of wings 2 inches 2 lines.

♂ var. Wings above paler in tint; ash-coloured costa of primaries darker; markings below rather paler. Expanse of wings 1 inch $1\frac{1}{2}$ lines.

♂, Scinde? (B.M.); ♂ var., N.W. India (coll. F. Moore).

Wallace labelled this as his *Idmais fulvia*; but it is quite distinct.

31. TERACOLUS FULVIA.

♂, *Idmais fulvia*, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 392. n. 5, pl. 9. fig. 5 (1867).

Idmais tripuncta, Butler, Proc. Zool. Soc. p. 221, pl. 17. fig. 9 (1868).

♂ ♀, N. W. India.

Type, coll. Moore.

The female is white instead of orange.

7. *Closely allied to the preceding group; wings pale salmon-colour or white above, with broad black-brown outer borders, intersected by spots of the ground-colour; wings below coloured much as in Colias. Idmais, Boisdu. Type I. calais.*

32. TERACOLUS VESTALIS, n. sp. (Plate VII. fig. 10.)

♂ ♀. Size of the preceding group of species: white above, with a broad irregular external black border; two white spots placed obliquely below the apex of primaries, and a third much larger on second median interspace; a large black spot at the end of the cell;

the subcostal area, discoidal cell (excepting its inferior angle), and the base of interno-median area black-brown, somewhat diffused in the male: wings below sulphur-yellow, the male with the internal area of primaries white, the female with the disk white; the male slightly tinted on outer border of primaries, and over the whole of secondaries, with ochraceous; minute marginal black dots at the terminations of the nervures; primaries with a large black spot, with a squamose yellow centre at end of cell; three black spots near outer margin, below the median branches; secondaries with a blackish subapical costal spot; a minute blackish annular dot at end of cell; outer border of upperside visible through the wing; entire wing sprinkled with black scales. Expanse of wings, ♂ 2 inches, ♀ 1 inch 11 lines.

♂, Scinde (*Le Mesurier*); ♀, Agra, N.W. Punjab. Coll. Moore.

33. TERACOLUS PUELLARIS, n. sp.

♂ ♀. Allied to the preceding, but considerably smaller; outer border in the male narrower; basal area of primaries and base of secondaries grey, irrorated with brown: wings below sulphur-yellow, the internal area white; black spots near outer margin of primaries placed more irregularly, the lower of the three extending downwards and expanding upon the inner margin; subapical costal spot of secondaries ill-defined. Expanse of wings, ♂ 1 inch 5 lines, ♀ 1 inch 6 lines.

♂, Punjab, Wuzerabad (*Hearsay*, B.M.); ♀, Scinde (coll. F. Moore).

This may possibly be a dwarfed form of the preceding species; but I think not.

34. TERACOLUS OCHREIPENNIS, n. sp.

♂ ♀. Above like the preceding species, white, with black irregular outer border, marked in the primaries with three white spots, black discocellular spot, and grey base: below, however, it differs in having the primaries with the outer border pale ochreous; secondaries entirely pale ochreous or buff. Expanse of wings, ♂ 1 inch 4 to 5 lines, ♀ 1 inch 6 to 8 lines.

♂, India; ♂ ♀, Punjab; ♀, Scinde; ♀ var., N. India.

Colls. Moore and B.M.

The three preceding species have been considered by some Lepidopterists females of n. 37, which has been confounded with the *Phisadia* of Godart.

35. TERACOLUS PHISADIA.

♂. *Pieris phisadia*, Godart, Enc. Méth. ix. p. 132. n. 40 (1819).

Idmais phisadia, Boisduval, Sp. Gén. Lép. i. p. 587. n. 3 (1836).

♂ ♀. *Pontia arne*, Klug, Symb. Phys. pl. 7. figs. 1-4 (1829).

♂. *Idmais arne*, Boisduval, Sp. Gén. Lép. i. pl. 19. fig. 2 (1836).

Senegal.

B.M

This species has the primaries pale pinkish salmon-colour, and the secondaries white; the female is, according to Klug's figure, yellow.

36. TERACOLUS ZOË.

Anthocharis zoë, Grandidier, Rev. Zool. p. 272 (1867).

Callosune zoë, Kirby, Syn. Cat. p. 504. n. 51 (1871).

Madagascar.

This species seems to me to be closely allied to the preceding; Kirby, however, refers it to *Callosune*, whilst he places *T. phisadia* in the genus *Idmais*.

I am pleased to find a typical *Idmais* described as an *Anthocharis* by a man who, inasmuch as he worked but little at the Lepidoptera, was obliged, when he did so, to examine into their structure, because it is a confirmation of my own conviction that *Idmais* does not differ *structurally* from the group *Callosune*, hitherto regarded as a distinct genus by many Lepidopterists.

37. TERACOLUS PROTRACTUS, n. sp.

♂ ♀. Wings above rosy salmon-colour, the base, costa of primaries, abdominal area of secondaries, and five to seven decreasing spots on the outer border of primaries ashen-grey; a broad black-brown outer border, paler, and occupying nearly half the wing in the secondaries of the female: wings below sordid pale buff; primaries with the base of costa and cell sulphur-yellow; outer border greyish, owing to the semitransparency of the wing; a black spot at end of cell, and three below median branches, the lowest one bifid; secondaries with the external area greyish, as in the primaries. Expanse of wings, ♂ 1 inch 8 to 9 lines, ♀ 1 inch 7 to 9 lines.

♂, Punjab (coll. B.M.); ♀, Punjab (coll. F. Moore).

38. TERACOLUS MODESTUS, n. sp.

♂. Very like *T. amata*, pale pinky salmon-colour, grey at base; the outer border broadly black-brown, upon primaries very feebly sinuated internally between the median branches, barely enclosing a spot of the ground-colour on interno-median interspace, and marked by an oblique slightly inarched series of three subapical points of the same colour, upon secondaries bordered internally by four minute points of the ground-colour, limited by black dots and surrounded with grey; costal area black-brown, broader in the male than the female, and on the primaries dusted in front with grey: wings of the male below yellow as in *T. amata*, with similar markings, but the spots at end of cells very minute and ill-defined: the female, which is paler above than the male, is slightly tinted with grey below; two or three extremely ill-defined ochreous spots beyond the cell of primaries and bounding the usual pale yellow spots of the disk; fringe feebly pink; secondaries with a discal series of five ochreous spots, and a pale-centred ochraceous discocellular spot. Expanse of wings 1 inch 7 lines, ♀ 1 inch 5 lines.

Ceylon (*Templeton*).

♂ ♀, type, B.M.

A white variety of the female occurs, not differing on the under surface.

39. TERACOLUS AMATA.

Papilio amata, Fabricius, Syst. Ent. p. 476. n. 143 (1775).*Idmais amata*, Butler, Fabr. Cat. p. 217. n. 1 (1869).*Papilio calais* (part), Cramer, Pap. Exot. iv. pl. 351, A-D (1782), bad figures.

♂ ♀, Kurnool; ♂ ♀, Balasore; ♂, Bombay; ♀, Madras; ♂, Deccan; ♀, Coromandel. Colls. F. Moore and B.M.

The last two of the examples quoted above are in the Museum collection: the species is the size of *T. calais* (the female sometimes larger); it is much like *T. dynamene*; but the outline of the marginal border is much less irregular, and the colouring of the underside clear, the female only showing more or less strongly defined transverse discal spots. A white female from Kurnool is in Mr. Moore's collection; it has the markings of the underside better defined than usual in the typical female.

40. TERACOLUS CYPRÆA.

Papilio cypræa, Fabricius, Ent. Syst. iii. p. 203. n. 634 (1793).

♂ ♀, Bombay (8 examples). Coll. F. Moore.

This species is considerably larger than *T. calais*, the figure of which Fabricius quotes for it; the male measures 1 inch 8 lines to 2 inches 1 line, and the female 1 inch 11 lines to 2 inches 2 lines. It is easily distinguished from *T. calais* on the underside by the absence of the orange spot on disk of primaries, and by its deeper coloration; from the preceding species *T. amata* it is easily distinguished by its more elongated primaries, deeper coloration below, and the more irregular outer border of the primaries, the enclosed spot on interno-median interspace being much broader.

There is a white female in the collection of the British Museum; it is smaller than typical females, and the ground-colour on the under surface is paler.

41. TERACOLUS DYNAMENE.

Pontia dynamene, Klug, Symb. Phys. pl. 6 figs. 15, 16 (1829).*Idmais dynamene*, Boisduval, Sp. Gén. Léop. i. p. 588. n. 5 (1836).

♂, N. India (B.M.); ♂ ♀, Scinde and Agra; ♂, Kattywur; ♀, Punjab (coll. F. Moore).

This species is frequently confounded with *T. amata* in collections. It is, however characterized by a much less rounded outer margin to the primaries, paler and more greyish coloration, the abdominal half of secondaries distinctly grey in the male, the inner edge of the external border of primaries more irregular even than in *T. cypræa*, the greener coloration of the under surface, the paler female, which has a distinct orange blotch (cut by the median nervure and its first two branches) on the under surface of the primaries, as in *T. calais*, and in the greater prominence of the pale marginal internervular liture on the upper surface.

42. TERACOLUS CARNIFER, n. sp. (Plate VII. figs. 8, 9.)

♂. Allied to the preceding species, but smaller, and of a clearer

and brighter colour, the costa of primaries, base, and abdominal area of secondaries much less strongly suffused with grey; the black discocellular spot of primaries more conical in shape; the outer blackish border terminating abruptly upon the first median branch, the margin alone being black; the black spot on interno-median area smaller and not connected with the outer border; six discal spots of the ground-colour running in a curved series through the centre of the border, the first four large, placed in pairs, the last two small and well separated; six submarginal smaller spots, the two at apex elongated; secondaries with five large diamond-shaped brown spots at the end of the nervures, the upper three united into an apical marginal band; the last of these spots ill-defined on a grey ground at end of second median branch; the first median and internal nervures also terminate in diamond-shaped grey spots; three small black spots on the disk, above the median nervures; costal area, excepting at apex, broadly black: wings below nearly as in *T. dynamene*, but clearer in colour, with a suffused orange patch over the median nervure. Expanse of wings 1 inch 5 lines.

Mynpuri, N.W. Punjab.

Type, coll. F. Moore.

43. TERACOLUS CALAIS.

Papilio calais, Cramer, Pap. Exot. i. pl. 53. figs. c, d (1779).

Idmais calais, Trimen, Rhop. Afr. Austr. p. 61. n. 40 (1862).

Congo (Curror).

B.M.

This species is of the size and form of *T. amata*, but can readily be distinguished by the orange patch below, which is more strongly developed than in any other species; the female has the disk and external spots of the primaries and the whole of the ground-colour of secondaries whitish. Cramer confounded the African species with the insect from Coromandel, which he figured under the same name in his fourth volume.

8. *Wings white or sulphur-yellow, spotted or banded above with black or grey, the apex of primaries invariably orange in the males, generally black in the females with a central orange, yellow, or white macular band; this band, however, is occasionally absent, leaving the apex wholly black.* Callosune, Doubleday.

8 a. Orange apical patch of the male without an internal black edge, interrupted internally on second median interspace by a transverse black spot. Typical form, *T. interruptus*.

44. TERACOLUS SUBFUMOSUS, n. sp. (Plate VI. fig. 3.)

♂. Very like *T. interruptus*, but with no internal blackish streak on the primaries, with the black outer border of the orange patch narrower, the inner spot small; the inferior extremity of the orange patch not enclosed by a black expansion of the border; secondaries with the marginal spots small: primaries below white, the apical area clay-coloured speckled with grey and bordered internally by a dull orange diffused streak; secondaries pale buff, densely irrorated

with grey, the upper half of discoidal cell, the lower half of discoidal interspace, and the centres of the interspaces thence to the costa whitish; nervures terminating in minute black points; costa and apical half of outer margin ochraceous. Expanse of wings 1 inch 6 lines.

♀. Sulphur-yellow or white, base dusky; primaries with a more or less defined (but always pale) grey internal streak; a black point at end of cell; outer margin broadly black, dentate-hastate internally; immediately beyond and touching the points of the denticles an oblique angulated black band (the two sometimes barely distinguishable owing to the expansion of the black points); the spots left between the border and the band and a narrow streak inside the latter orange or sulphur-yellow; secondaries with a series of triangular marginal black spots, a blackish subapical costal spot, and a badly-defined W-shaped marking cut by the third median branch; wings below more deeply coloured than in the male; the cell of primaries tinted with sulphur-yellow; otherwise the same. Expanse of wings 1 inch 4-5 lines.

N.E. of Natal (12 examples, *E. C. Buxton*).

Type, B.M.

45. *TERACOLUS LYCORIS*, n. sp. (Plate VI. fig. 6.)

♂. Wings above as in the preceding species; secondaries below sandy whitish, irrorated with grey-brown; a black-and-orange dot at end of cell; a congregation of brown atoms on subcostal interspace near apex, and another on the disk, cut by the third median branch. Expanse of wings 1 inch 5 lines.

♀. Wings above white; base grey; primaries with a more or less defined but always pale grey internal streak, ending in a blackish spot; a black dot at end of cell; apex broadly black, crossed by an ill-defined series of minute squamose orange spots; inner edge of apical patch sometimes bordered with sulphur-yellow; secondaries with a more or less strongly defined series of marginal black spots, the three next to apex largest and sometimes united; a black subapical costal spot, and a larger spot on discoidal interspace, sometimes throwing off a smaller diffused blackish spot on each side: primaries below white, showing the discocellular dot and internal spot of upper surface; apex clay-coloured or sandy, irrorated with grey, and bordered within by an oblique series of four black or brown spots; secondaries clay-coloured or sandy, irrorated with grey; a black spot or black-and-orange point at end of cell; and an angulated series of black or brown discal spots. Expanse of wings 1 inch 4-5 lines.

Between Natal and Delagoa Bay (4 examples, *E. C. Buxton*).

Type, B.M.

This is the *Anthopsyche eucharis* of Wallengren, but not of Fabricius.

46. *TERACOLUS FLAMINIA*, n. sp. (Plate VI. fig. 1.)

♂. Like *T. subfumosus* above, but the primaries with a more or less defined dusky spot on interno-median interspace, sometimes

connected by a greyish internal streak with the base; secondaries with the marginal spots occasionally larger, and a dusky ill-defined spot on the second median interspace: primaries below with the apical area dull lemon-yellow, bounded internally by an angulated brown line, followed by and edging a broad orange streak; secondaries sandy whitish, irrorated sparsely with brown, a congregation of brown scales on the costa near apex, and an ill-defined streak across the median branches; costa at base orange, a black and orange point at end of cell. Expanse of wings 1 inch 4-7 lines.

♀. Sulphur-yellow above, base slightly greyish, internal area of primaries grey, darkest at base and in a spot beyond the middle, where it terminates; outer margin bordered by brown triangular connected spots, the apices of the nervures also brown; a narrow angulated discal brown streak halfway between the cell and apex; a minute black point at end of cell; secondaries with a marginal series of brown spots, a lunular subapical spot on subcostal interspace; a squamose brown discal streak across the median branches: wings below with the base of primaries yellow and the secondaries slightly darker; otherwise as in the male. Expanse of wings 1 inch 3 lines.

Between Natal and Delagoa Bay (4 examples, *E. C. Buxton*).

Type, B.M.

This is a well-marked little species, easily distinguished by the coloration of the under surface.

47. TERACOLUS LYÆUS, n. sp. (Plate VI. fig. 2.)

♂. Wings above white, base greyish black, base of costa, head, palpi, and prothorax pinkish; centre of costa of primaries markedly black; apex orange, sharply cut, with lilacine reflections; outer border to first median branch black, strongly sinuated between the veins, whose apices are also black; a well-defined rounded black spot, touching the third median branch, upon the second median interspace; fringe, excepting at external angle, rosy; an ill-defined internal pale grey streak, slightly darker at its extremity; secondaries with a marginal series of black spots, more or less triangular; fringe rosy at anal angle: primaries below with the apical area chrome-yellow, irrorated with grey and cut by an angulated orange streak; fringe and costa as above; secondaries rosy, irrorated with grey; a dusky subapical spot, and a second on second median interspace; an orange-and-black discocellular point; costa deep orange. Expanse of wings 1 inch 4 lines.

♀. White above, with the apex of primaries yellow and the costa rosy; base yellow, irrorated with grey; primaries with apical markings, as in the preceding species, but broader; a greyish ill-defined internal streak, terminating in a brown spot; secondaries with a marginal series of large brown spots, a brown subapical spot, and a W-shaped discal marking cut by the third median branch: wings below as in the male, but rather paler. Expanse of wings 1 inch 4 lines.

Between Natal and Delagoa Bay (3 examples, *E. C. Buxton*).

Type, B.M.

48. *TERACOLUS FRIGA*, n. sp. (Plate VI. fig. 5.)

♂, ♀. White above, the female slightly tinted with sulphur-yellow towards the base; base blackish grey; primaries with the apex orange; costa of the male broadly black in the centre; outer margin black, dentate-lacinate, the apices of the nervures black, male with the usual black spot on the orange, the female with the angulated black streak; a black internal spot indicating the termination of a greyish streak (dimly visible in the female only); secondaries with a marginal series of conical black spots united in the female; an ill-defined W-shaped marking touching the third marginal spot; primaries below white; a black dot at end of cell; apex in the male broadly dull reddish, becoming greyish externally and crossed by a scarcely visible angulated grey streak; costa and apex of the female ochreous, irrorated with grey; a subapical angulated brown streak; base and subcostal area sulphur-yellow; secondaries of the male sordid white, irrorated with blackish; the costa deep orange; two subapical ochreous spots; an orange-bordered black dot at end of cell; secondaries of the female sandy, becoming whitish towards the centre, densely irrorated with purplish brown; two subapical brown spots; costa orange; a black-and-orange dot at end of cell. Expanse of wings ♂ 1 inch 5 lines, ♀ 1 inch 4 lines.

N.E. of Natal (*E. C. Buxton*).

Type, B.M.

49. *TERACOLUS GALATHINUS*, n. sp.

♂. Above like *T. interruptus*, excepting that there is a submarginal zigzag grey streak from the radial to the internal nervure of secondaries; primaries below white; a black discocellular point; apical area reddish orange, with a subapical diffused yellow spot; fringe rosy; secondaries rosy, irrorated with brown; a subapical brown spot, and a discal brown streak across the median branches; costa deep orange; a black-and-orange dot at end of cell. Expanse of wings 1 inch 6 lines.

♀. White, with the subapical and subbasal areas yellow, base grey; primaries with the costa and fringe rosy; a black discocellular spot; a broad blackish internal streak terminating in a black spot; apex broadly black, sometimes crossed by a curved series of cuneiform yellow spots; secondaries with a marginal series of conical black spots; an irregular discal black streak; apex yellowish; primaries below white, the basal and costal areas sulphur-yellow; a black point at end of cell; apical area clay-coloured, reddish externally, and bounded within by a brown angulated streak bordered with dull reddish orange; secondaries as in the male, but darker. Expanse of wings 1 inch 4 lines.

N.E. of Natal (1 ♂, 6 ♀, *E. C. Buxton*).

Type, B.M.

50. *TERACOLUS INTERRUPTUS*.

♂, ♀ *Teracolus interruptus*, Butler, P. Z. S. p. 724 (1871); Lep. Exot. p. 115, pl. xliii. figs. 1, 2 (1872).

♂ ♀, Loanda (*coll. R. Meldola*); ♂, Angola (*E. C. Buxton*).

B.M.

I have compared our example with male specimens given to me by Mr. Ansell, from Kinsembo, and find no difference.

51. *TERACOLUS LUCULLUS*. (Plate VI. fig. 4.)

♂. Above very like the preceding species, but the internal streak of primaries more defined, the base and costa of secondaries blackish, terminating near apex in a black costal spot; marginal spots of secondaries more distinctly separated: wings below white, primaries with the apical area sulphur-yellow, covered internally by a broad orange patch (not so broad as in *T. interruptus*), through the centre of which runs an angulated grey streak; a black point at end of cell; a blackish spot on internal area; secondaries tinted with pale sulphur-yellow at apex; basal half of costa orange, a blackish sub-apical costal spot; a black-and-orange dot at end of cell; an angulated brown marking on the disk, cut by the third median branch; a marginal series of black dots terminating the nervures. Expanse of wings 1 inch 5 lines.

♀, *Teracolus loandicus* (in part), Butler, P. Z. S. p. 724 (1871); Lep. Exot. p. 91, pl. xxxiv. fig. 9 (1872).

♂, Ambriz, October 1872 (*J. J. Monteiro, B.M.*); ♀, Loanda (*coll. R. Meldola*).

I have no doubt that I made a mistake in referring the above female to my *T. loandicus*, the differences between it and the female of *T. interruptus* being precisely parallel to the differences between the two males. *T. loandicus* will come into another section, in which the females have the marginal spots of secondaries rather small, the orange patch of primaries curved and not extending beyond the limiting streak, and an interrupted angular streak from costa to internal area of secondaries.

52. *TERACOLUS GELASINUS*, n. sp.

♂. Nearly allied to *T. interruptus*, but readily distinguished by the absence of the internal streak of primaries and the small marginal spots of secondaries: wings below white, the nervures terminating in black dots, all the wings with black dots at the end of the cells; primaries with the apex broadly sulphur-yellow, bounded internally by a rather narrow orange band, on which are a few dusky scales; sometimes a small dusky spot near inner margin beyond the middle; secondaries speckled with brown, with the basal third of costa orange, sometimes a small dusky spot on second median interspace. Expanse of wings 1 inch 4-7 lines.

♂. Quanza, August 1872; ♂, Ambriz, October 1872 (*J. J. Monteiro*). Type, B.M.

53. *TERACOLUS ANTIGONE*.

Anthocharis antigone, Boisduval, Sp. Gén. Lép. i. p. 572. n. 19 (1836).

Callosune antigone, Kirby, Syn. Cat. p. 502. n. 21 (1871).

Anthocharis phlegetonia, Boisduval, Sp. Gén. Léop. i. p. 576. n. 25 (1836).

Callosune phlegetonia, Kirby, Syn. Cat. p. 503. n. 30 (1871).

West Africa.

B.M.

The *Anthocharis phlegetonia* of Wallengren and the *A. achina* of Lucas are distinct species.

54. TERACOLUS EIONE.

Anthocharis eione, Boisduval, Sp. Gén. Léop. i. p. 578. n. 29 (1836).

Callosune eione, Kirby, Syn. Cat. p. 503. n. 35 (1871).

Var. *Anthopsyche phlegetonia*, Wallengren, Lep. Rhop. Caffr. p. 13 (1857).

♂ ♀, S. Africa (*E. C. Buxton*); ♀, Zoolu (*Sir A. Smith*). B.M.

55. TERACOLUS STYGIA.

Anthopsyche stygia, Felder, Reise der Nov. Lep. ii. p. 188. n. 183 (1865).

Callosune stygia, Kirby, Syn. Cat. p. 503. n. 31 (1871).

Bogos.

Allied to *T. eione*.

56. TERACOLUS ISAURA.

Anthocharis isaura, Lucas, Rev. Zool. p. 424 (1852).

Callosune isaura, Kirby, Syn. Cat. p. 503. n. 38 (1871).

Abyssinia.

57. TERACOLUS DALILA.

Anthopsyche dalila, Felder, Reise der Nov. Lep. ii. p. 188. n. 184 ("1865").

Callosune dalila, Kirby, Syn. Cat. p. 503. n. 32 (1871).

Bogos.

58. TERACOLUS DAIRA.

♂ ♀, *Pontia daira*, Klug, Symb. Phys. pl. 8. figs. 1-4 (1829).

Anthocharis daira, Boisduval, Sp. Gén. Léop. i. p. 579. n. 30 (1836).

Callosune daira, Kirby, Syn. Cat. p. 503. n. 34 (1871).

♂ ♀, White Nile (*Petherick*).

B.M.

8 b. Orange apical patch with or without a black edge, but not interrupted internally in the male by black spots.

59. TERACOLUS GLYCERA, n. sp.

♂. Wings above white, with an oblique slightly incurved orange apical patch on primaries; centre of costa and outer margin black, the latter dentate-sinuate; a greyish internal streak terminating in a blackish spot; secondaries with the base and costal area near apex grey; a marginal series of triangular black spots, and, touching them,

a submarginal grey streak : wings below white ; primaries with the discoidal cell bright sulphur-yellow, a black dot at the end of it ; apex pale lemon-yellow, bounded internally by an orange streak ; a dusky spot on internal area ; secondaries with the base of costa orange ; a black-and-orange dot at end of cell ; a dusky streak across the median branches. Expanse of wings 1 inch 6 lines.

Africa ?

Type, coll. B.M.

60. TERACOLUS PALLENE.

Anthocharis pallene, Hopffer, Ber. Verh. Ak. Berl. p. 640. n. 4 (1855) ; Peters's Reise n. Mossamb. Zool. v. p. 358, pl. 23. figs. 7, 8 (1862).

Callosune pallene, Kirby, Syn. Cat. p. 504. n. 50 (1871).

Mozambique.

61. TERACOLUS NOUNA.

Anthocharis nouna, Lucas, Expl. Alg. Zool. iii. p. 350. n. 14, pl. 1. fig. 2 (1849).

Callosune nouna, Kirby, Syn. Cat. p. 503. n. 39 (1871).

Algeria.

62. TERACOLUS LIAGORE.

Pontia liagore, Klug, Symb. Phys. pl. 6. figs. 5-8 (1829).

Anthocharis liagore, Boisduval, Sp. Gén. Lép. i. p. 580. n. 33 (1836).

Callosune liagore, Kirby, Syn. Cat. p. 503. n. 42 (1871).

Arabia.

63. TERACOLUS EPHYIA.

Pontia ephyia, Klug, Symb. Phys. pl. 6. figs. 9, 10 (1829).

Anthocharis ephyia, Boisduval, Sp. Gén. Lép. i. p. 580. n. 32 (1836).

Callosune ephyia, Kirby, Syn. Cat. p. 503. n. 40 (1871).

Arabia.

64. TERACOLUS LAIS, n. sp.

♂. Like the preceding species, but whiter, the orange patch of primaries much more oblique and consequently shorter, not extending below the third median branch, but bordered internally by a broader blackish band ; primaries with a well-defined discocellular spot : below, the secondaries have a black-and-orange dot at end of cell, the base of costa orange ; the black irroration scattered all over the wing. Expanse of wings 1 inch 4 lines.

Orange River, S. Africa.

Type, B.M.

65. TERACOLUS HALYATTES, n. sp. (Plate VI. fig. 8.)

♂. Wings above white, primaries with an orange apical patch, more or less excavated internally, enclosed by a black border, and crossed by blackish veins ; base blackish ; a more or less defined

black dot at end of cell; secondaries with small black spots terminating the veins, base blackish: primaries below with the costa rosy brownish; the apical area dull sandy ochraceous, irrorated with brown; a black dot at end of cell; secondaries sandy with a rosy tinge, irrorated with brown; a squamose subapical costal spot, and an ill-defined streak across the median branches, brown; base of costa orange, a black-and-orange dot at end of cell. Expanse of wings 1 inch 2-5 lines.

♀. White or sulphur-yellow above, base grey; primaries with the costa rosy, an internal grey streak, terminating at second third of wing in a transverse irregular blackish litura, which almost meets a spur from the apical area; the latter black, deeply notched internally, enclosing an oblique series of spots, four or five in number, orange, yellow, or white; the inner edge of the apical border bounded with orange in the orange-spotted form, and with an orange tint in the yellow-spotted form: secondaries with the cell and basal half of the interno-median and first median interspaces grey; a more or less defined angulated discal black streak thence to the costa; a marginal series of tolerably large black spots. Primaries below white or pale yellow, the bases broadly sulphur-yellow; apical area sandy or yellowish ochraceous, irrorated with brown and bounded by a pale orange or bright yellow nebulous streak enclosing a macular brown streak; a bisinuate brown litura, cut by the first median branch; a black dot at end of cell: secondaries as in the male, excepting that the subapical spot and discal streak are united into an angulated bar. Expanse of wings 1 inch 5-8 lines.

N.E. of Natal (*E. C. Buxton*).

Type, B.M.

66. *TERACOLUS ITHONUS*, n. sp. (Plate VI. fig. 7.)

♂. Wings above white, blackish at base: primaries with a large triangular reddish-orange apical patch, not excavated, but notched internally, a few brown scales along its inner border; apical portion of costa and outer margin to first median nervule black; the marginal border dentate-sinuate, and throwing off long spurs along the nervures, but not completely separating the apical patch; a minute black dot at end of cell: secondaries with a series of six black marginal dots. Primaries below white, the apical area lemon-yellow, irrorated with grey; a black dot at end of cell: secondaries sandy whitish, strongly reticulated with brown; a black dot at end of cell; base of costa orange. Expanse of wings 1 inch 9 lines.

♀. Very like the females of the preceding species, but with all the black portions of the wing much less pronounced, the grey internal streak of primaries pale and ending in a distinct dark spot (not in an irregular transverse litura); the apical spots larger; the undersides of secondaries more evidently brown-speckled. Expanse of wings 1 inch 5-8 lines.

N.E. of Natal (4 examples, *E. C. Buxton*).

Type, B.M.

67. *TERACOLUS HARMONIDES*, n. sp.

♂. Like a small example of the preceding species above, but the

marginal dots of secondaries still smaller: primaries below with the apical area sandy reticulated with grey, with pale rosy borders, and an oblique inner transverse grey line composed of three grey spots: secondaries rosy whitish reticulated with grey; a black dot at end of cell; the base of costa orange. Expanse of wings 1 inch 6 lines.

♀. White above, the base greyish; primaries with the costa greyish, black towards apex; apical area orange; outer border rather broadly black, deeply sinuated internally, extending to first median nervule; a subapical oblique irregular black streak, united to the outer border by black lines on the nervures (thus producing five subapical spots, the second minute); a black dot at end of cell; a grey internal streak terminating in a blackish spot: secondaries with the abdominal area greyish; six decreasing greyish-brown marginal spots, very large at apex; a dusky subcostal spot towards apex; a dusky oblique irregular marking on the disk and touching the third and fourth marginal spots. Primaries below white, the base pale yellowish; a black dot at end of cell; a grey internal line, terminating in a large black spot; apical area sandy, speckled with brown, becoming orange internally, and crossed by three grey spots: secondaries whity-brown, reticulated with brown; a black dot at end of cell; costa tinted with orange at base. Expanse of wings 1 inch 5 lines.

Between Natal and Delagoa Bay (*E. C. Buxton*). Type, B.M.

68. TERACOLUS HIPPOCRENE, n. sp.

♂. Also like *T. ithonus* above, but the marginal spots of secondaries larger and the base more heavily blackened: primaries below white, the apical area lemon-yellow, becoming paler externally; a black dot at end of cell: secondaries creamy white; the veins brownish; abdominal half of the wings speckled with brown; base of costa bright golden orange; a black-and-orange dot at end of cell. Expanse of wings 1 inch 6 lines.

♀. White, the apical area stramineous, with the black and grey markings as in *T. ithonus*, excepting that the internal grey streak is narrower: secondaries with basal and abdominal areas greyish; a marginal series of grey spots; an ill-defined W-shaped marking on the disk, cut by the third median branch. Wings below white: primaries with a black dot at end of cell; apex creamy yellowish speckled with brown, stramineous externally, and crossed obliquely by four brown spots: secondaries creamy, speckled with brown hatchings, which congregate as spots on the costa near apex and upon the centre of the disk; a black dot at end of cell. Expanse of wings 1 inch 7 lines.

Between Natal and Delagoa Bay (*E. C. Buxton*). Type, B.M.

69. TERACOLUS IGNIFER, n. sp.

♂. Wings above white, the base blackish: primaries with the apical half of costa and the outer margin to first median branch black, the apical fork of the subcostal, external two fifths of the radials, half the third median, external third of the second median,

and apex of the first median nervule black; apical area broadly deep orange (almost vermilion), its internal edge bordered indistinctly by black atoms; a black dot at end of cell: secondaries with the apices of the nervures black, a marginal series of grey spots terminating the nervures. Primaries below white; apical area creamy orange, becoming clear and bright internally, crossed obliquely by a few brown scales, and speckled with brown towards apex: secondaries creamy whitish, with a feeble pink tint, densely reticulated, excepting just beyond the cell, with brown; a black-and-orange dot at end of cell, base of costa orange. Expanse of wings 2 inches.

♀. Very like the female of *T. halyattes*, but much larger, the apical spots of primaries above larger, the secondaries below with a clear patch beyond end of cell, as in the male. Expanse of wings 1 inch 9 lines.

Var. ♂. Apical area of primaries below uniformly pinkish; the secondaries also much more pink. Female with the internal streak of primaries above expanded into a broad irregular blackish patch. Expanse of wings, ♂ 1 inch 8 lines to 2 inches, ♀ 1 inch 9 lines.

♂, Zoolu (*Sir A. Smith*); ♂ ♀, S. Africa (12 specimens, *E. C. Buxton*).

Type, B.M.

This is probably Trimen's *Anthocharis antevippe*, but not Boisduval's.

70. TERACOLUS CASTUS.

♂. *Callosune casta*, Gerstaecker, Van der Decken's Reisen in Ost-Afrika, 3. Abth. ii. p. 365. n. 6, pl. xv. figs. 1, 1a (1873).

Lake "Jipe," E. Africa.

Allied to *T. deidamia*.

71. TERACOLUS SIMPLEX, n. sp.

♂. Wings above white: primaries with a very oblique triangular orange apical patch, bordered narrowly on its costal and external edges with pale brown; a minute black dot at end of cell. Primaries below white, with the apical area ochraceous, indistinctly speckled with brown; a black dot at end of cell: secondaries pale rosy whitish, reticulated with reddish brown; base of costa reddish; a pale-yellow-and-black dot at end of cell; a few brown atoms congregated below the costa near apex. Expanse of wings 1 inch 10 lines.

D'Urban (*Capt. Shelley*).

Type, B.M.

This species is readily distinguished by the absence of grey scaling at the base, the indistinctness of the outer border of the primaries, and the very oblique inner edge of the orange apical patch.

72. TERACOLUS DEIDAMIA.

Anthopsyche deidamia, Wallengren, Wien. ent. Monatschr. iv. p. 35. n. 7 (1860).

Callosune deidamia, Kirby, Syn. Cat. p. 503. n. 41 (1871).

♂, 2 examples, Zoolu (*Sir A. Smith*).

B.M.

73. TERACOLUS ZERA.

Anthocharis zera, Lucas, Rev. Zool. p. 423 (1852).*Callosune zera*, Kirby, Syn. Cat. p. 502. n. 20 (1871).

Abyssinia.

Closely allied to *T. antevippe*, but the orange apical patch with a black internal margin.

74. TERACOLUS ANTEVIPPE.

Anthocharis antevippe, Boisduval, Sp. Gén. Lép. i. p. 572. n. 18, pl. 18. fig. 3 (1836).♂ ♀, White Nile (*Petherick*), ♂, Senegal.

B.M.

75. TERACOLUS HELLE.

♂. Nearly allied to *T. antevippe*, but the base of primaries broadly grey; outer black border of primaries twice the width; costa, excepting at base, distinctly black; orange patch of primaries below more restricted: terminations of veins in secondaries less distinctly black. Expanse of wing 1 inch 11 lines.♀. Primaries rounded at apex; basal area of wings considerably darker than in *T. antevippe*, marginal spots of secondaries larger: primaries below with the transverse grey subapical streak almost obsolete; secondaries considerably whiter. Expanse of wings 1 inch 8 lines.White Nile (*Petherick*).

Type, B.M.

Possibly a variety of *T. antevippe*, but quite distinct in appearance. Until all these species have been bred, it will be necessary to regard all the dissimilar and apparently constant forms as different species.

76. TERACOLUS HYPERIDES.

Allied to *T. antevippe*; the male, however, differs in the narrow, squamose, black, internal edging to the orange-patch, and in the presence of a grey internal streak in primaries; the nervures of secondaries on underside not noticeably black-tipped; the orange of costa confined to the base, and the spot at end of cell smaller. The female also has the apical area of primaries distinctly orange, with a broad brown patch covering the base of discoidal cell and extending to beyond second third of internal area; the abdominal area of secondaries brownish, the angulated band more distinct: wings below altogether paler; primaries with a greyish internal streak, terminating in a large black spot; secondaries yellow instead of orange-tinted; the veins not black, angulated band less distinct. Expanse of wings ♂ 1 inch 9 lines, ♀ 1 inch 8 lines.N.E. of Natal (3 specimens, *E. C. Buxton*).

Type, B.M.

77. TERACOLUS ACHINE.

♀. *Papilio achine*, Cramer, Pap. Exot. iv. pl. 338. figs. E, F (1782).*Pieris achine*? Godart, Enc. Méth. ix. p. 122. n. 14 (1819).S. Africa (4 examples, *E. C. Buxton*).

B.M.

The male differs from the *T. achine* of Hübner in having the veins

of secondaries below black and no marking on the disk; the female is altogether more heavily coloured.

78. TERACOLUS EVENINUS.

♀. *Anthopsyche evenina*, Wallengren, Lep. Rhop. Caffr. p. 12 (1857).

Anthocharis evenina, Trimen, Rhop. Afr. Austr. p. 322. n. 216 (1866).

Callosune evenina, Trimen, Trans. Ent. Soc. p. 380, pl. 6. fig. 11 (1870).

Orange River, S. Africa (*Janson*); S. Africa (*E. C. Buxton*).

B.M.

Males referred to *T. eveninus* in Mr. Druce's Collection do not differ in character from the other males of this group.

79. TERACOLUS TRIMENI, n. sp.

♂ ♀. *Aphrodite achine*, Hübner, Samml. exot. Schmett. ii. pl. 128. figs. 1-4 (1816-36).

♀ var. Apex of primaries black, crossed by five white spots, the angulated band of secondaries approaching at its angle nearer to the outer margin than in Hübner's figure.

♂ ♀, S. Africa (*E. C. Buxton*); ♂, Zoolu, Knysna, and Plettenberg Bay.

Type, B.M.

This species has the wings of the male below white, the veins not being blackened as in *T. achine*. We have five males and two females (both of the albino variety).

80. TERACOLUS GAVISA.

Anthopsyche gavis, Wallengren, Lep. Rhop. Caffr. p. 323 (1857).

Anthocharis gavis, Trimen, Rhop. Afr. Austr. p. 324. n. 218 (1866).

Callosune gavis, Kirby, Syn. Cat. p. 502. n. 18 (1871).

♂ ♀, *Anthocharis* —? Angas, Kaff. Ill. pl. 30. figs. 4 and 5 (1849).

♀, *Anthocharis exole* (part), Reiche, Ferr. Gal. Voy. Abyss. Ent. p. 460, pl. 31. figs. 5 and 6 (1849).

♂ ♀, *Anthocharis achine*, Trimen (nec Cramer), Rhop. Afr. Austr. p. 46. n. 29 (1866).

Anthopsyche roxane, Felder, Reise der Nov. Lep. ii. p. 187. n. 182 ("1865").

♂ ♀, S. Africa (7 examples, *E. C. Buxton*); ♀, Natal. B.M.

This species is larger than *T. achine*. The male below differs in having a distinct, subapical, diffused, orange spot in primaries, and the secondaries more varied with orange, with the veins black to the base. The female has a broader orange patch above, and the under-side more yellow in tint.

81. TERACOLUS HERO, n. sp. (Plate VI. fig. 12.)

♂. Allied to the preceding species, but larger, the vermilion patch at apex not bordered within with black, but with a few marginal

blackish scales; the black veins only crossing its outer area; the internal black streak replaced by a tapering dark grey streak, which disappears just beyond the middle of the internal nervure; marginal spots clearly defined and well separated; secondaries below with the veins white from the base to the middle of the wing and thence grey to the margin. Expanse of wings 2 inches 1 line.

♀. Pale testaceous, the apical spots of primaries stramineous; brown parts of the wing as in *T. gavis* ♀, excepting that the subapical band of primaries bounding the apical spots is not irregular externally, and is of more than twice the width; the spot at end of cell is lost in the brown basal patch, and the spots towards anal angle of secondaries are almost lost in the broad marginal border: below the wings are testaceous, the base and apex of primaries and the secondaries with a yellow tint and clouded with pale orange; the veins of external third of primaries are dusky, but on secondaries they are uniform with the ground-colour; the subapical, blackish, oblique streak of primaries is placed much nearer to the apex. Expanse of wings 1 inch 11 lines.

S. Africa (*E. C. Buxton*).

Type, B.M.

I believe the above to be sexes; they have much in common.

82. TERACOLUS OMPHALOIDES, n. sp.

Anthocharis achine, Boisduval (nec Cramer), Sp. Gén. Lép. i. p. 574. n. 21 (1836).

This species differs from *T. omphale* in the narrower, black internal stripe of primaries, the obsolete character or absence of the male transverse stripe in the secondaries, and the red tint of the under surface of the latter wings. Expanse of wings, ♂ 1 inch 4–10 lines, ♀ 1 inch 5–10 lines.

♂ ♀, S. Africa (11 examples, *E. C. Buxton*); ♂, Zoolu (*Sir A. Smith*).

Type, B.M.

If it were not for the number of examples which we now possess of this form, I should have been disposed to look upon it as a sport of *T. omphale*.

83. TERACOLUS OMPHALE.

Pieris omphale, Godart, Enc. Méth. ix. p. 122. n. 12 (1819).

Anthochaia omphale, Boisduval, Sp. Gén. Lép. i. p. 574. n. 22 (1836).

Callosune omphale, Kirby, Syn. Cat. p. 502. n. 23 (1871).

Anthocharis eurygone?, Lucas, Rev. Zool. p. 341 (1852).

Callosune eurygone, Kirby, Syn. Cat. p. 502. n. 19 (1871).

♂ ♀, N.E. of Natal (13 examples, *E. C. Buxton*).

B.M.

The undersurface of the secondaries in this species is of a greenish white colour, with the usual angular streak and discoidal spot.

84. TERACOLUS EXOLE.

♂. *Anthocharis exole* (part), Reiche, Ferr. Gal. Voy. Abyss. Ent. p. 460, pl. 31. fig. 4 (1849).

Callosune exole, Kirby, Syn. Cat. p. 503. n. 27 (1871).

♀. *Anthocharis achine*, Lucas (nec Cramer), Lep. Exot. pl. 37. fig. 2 (1835).

Anthopsyche acte, Felder, Reise der Nov. Lep. ii. p. 187. n. 181 ("1865").

♂, Knysna (*Trimen*); ♀, S. Africa (*E. C. Buxton*); Natal and Caffraria. B.M.

Wallengren, in his 'Lep. Rhop. Caffr.,' has confounded this species with *T. omphale*; the two females are much alike. M. Lucas's figure is not quite correctly drawn and is over-coloured; but there is no mistaking the species intended.

85. TERACOLUS SUFFUSUS, n. sp. (Plate VI. fig. 10.)

♀. Very like a small female of *T. omphale*, but the basal area of the primaries grey to costa, the subapical orange spots smaller, and the angular band of secondaries considerably narrower: wings below creamy white; secondaries with a distinct yellowish tint; primaries with a large, subapical curved, orange patch, leaving a narrow, sordid, yellow, apical border; secondaries with an angulated discal streak (its upper half ill defined) testaceous; a black-and-orange spot at end of cell. Expanse of wings 1 inch 4 lines.

Ambriz (*J. J. Monteiro*).

Type, B.M.

This very distinct little species is a link between the *T.-omphale* and *T.-epigone* groups.

86. TERACOLUS HYBRIDUS, n. sp.

♂ ♀. Above like *T. omphale*, below like *T. omphaloides*, but the secondaries of a more rosy tint, such as occurs in *T. theogone*. Expanse of wings, ♂, 1 inch 9 lines, ♀, 1 inch 10 lines.

♂, Plettenberg Bay; ♀, Natal.

Type, B.M.

This may be the result of a cross between *T. omphale* and *T. omphaloides*; it, however, clearly approaches *T. theogone* in the coloration of the under surface. Although species of the same genus are frequently known to make matrimonial mistakes, it is doubtful whether in such cases the females are often fertile.

87. TERACOLUS THEOGONE.

Anthocharis theogone, Boisduval, Sp. Gén. Léop. i. p. 575. n. 23 (1836).

Callosune theogone, Kirby, Syn. Cat. p. 502. n. 23a (1871).

♂ ♀, S. Africa (5 examples, *E. C. Buxton*); Zoolu (*Sir A. Smith*).

B.M.

The sexes of *T. theogone* were taken in copulâ by Mr. Buxton.

88. TERACOLUS DELPHINE.

Anthocharis delphine, Boisduval, Sp. Gén. Léop. i. p. 577. n. 28 (1836).

Callosune delphine, Kirby, Syn. Cat. p. 503. n. 33 (1871).

Sp. ead.? ♂ ♀, S. Africa.

B.M.

Nobody seems satisfied about the identification of this species; Mr.

Trimen, so far as I understand him, appears to have identified it with ♂ *T. omphaloides* and ♀ *T. gavis*.

89. TERACOLUS PROCNE.

Anthopsyche procne, Wallengren, Lep. Rhop. Caffr. p. 323 (1857).

Anthocharis procne, Trimen, Rhop. Afr. Austr. p. 323. n. 217 (1866).

Callosune procne, Kirby, Syn. Cat. p. 502. n. 17 (1871).

♂ ♀, S. Africa (*E. C. Buxton*).

B.M.

We have a small pair of this species presented by Mr. Buxton, the female of which has the orange subapical band rather narrower than usual.

90. TERACOLUS EPIGONE.

♂. *Anthopsyche epigone* (part), Felder, Reise der Nov. Lep. ii. p. 186. n. 180 (1865).

Callosune epigone, Kirby, Syn. Cat. p. 502. n. 25 (1871).

♂, White Nile (*Petherick*); ? ♀, Orange River, S. Africa. B.M.

I am not certain about the female which I have provisionally referred to this species.

91. TERACOLUS LOANDICUS.

♂. *Teracolus loandicus* (part), Butler, P. Z. S. 1871, p. 724 (1871); Lep. Exot. pl. xxxiv. fig. 10 (1872).

♀. Very like *T. procne* ♀; but the oblique black band bounding the curved orange band of primaries extremely narrow, the base of the same wings broadly grey; the internal streak ill-defined, no part of it visible on the underside; the undersurface of all the wings considerably paler. Expanse of wings 1 inch 7 lines.

♂, Kinsembo (*Ansell*); ♀, Ambriz (*Monteiro*).

B.M.

♂ ♀, var. Altogether less heavily marked; the female scarcely grey at the base, with no trace of the internal streak, and with the orange band broader; angulated streak of secondaries barely indicated, underside paler.

♂ ♀, Quanza, August 1871 (*J. J. Monteiro*).

B.M.

It is possible that this may be distinct; but I am unwilling to name it, from the close resemblance which it bears to typical *T. loandicus*.

92. TERACOLUS EBOREA.

♂. *Papileo eborea* (part), Cramer, Pap. Exot. iv. pl. 552. figs. C, D (1782).

? Africa.

Cramer figures the male of *T. danae* from Coromandel as the female of this species; and (notwithstanding his remarks upon the coloration of the apical patch) I believe he has improved the scarlet of the apical fascia in his male to make it more nearly agree with its supposed female. The species is clearly nearly related to the following, and never came from any part of Asia.

93. *TERACOLUS PSEUDOCALCIS*, n. sp. (Plate VI. fig. 9.)

♂. White above, the base grey; primaries with the apical two-fifths black, enclosing a large, reddish, orange, arched band, divided by the nervures into six parts; a minute black dot at end of cell; secondaries with a marginal series of six large triangular black spots: wings below white, base yellowish; primaries with the apical area creamy yellow, bounded internally by a large, curved, diffused, orange patch, a black dot at end of cell; secondaries with a black-and-orange spot at end of cell. Expanse of wings 1 inch 6–10 lines.

♀. Wings above white, basal two fifths grey, obliquely in primaries, and terminating at second third of internal nervure in a darker grey spot; apical third black, enclosing a curved, orange band, divided by the nervures into five parts; secondaries with well-developed, interrupted, angulated, blackish streak and 5 decreasing, triangular, marginal spots: primaries below nearly as in the male, secondaries pale yellow, with ochreous discal streak and a black dot at end of cell. Expanse of wings 1 inch 5–10 lines.

♂ ♀, S. Africa (*E. C. Buxton*); ♀, Orange River. Type, B.M.

94. *TERACOLUS ANGOLENSIS*, n. sp.

♂. Closely allied to the preceding, but the apical patch wider upon the costa and continued in the form of a tapering costal border nearly to the base; orange patch half as wide again, its inner black border tapering towards the costa; marginal spots of secondaries more pyramidal and consequently separated: wings below destitute of yellow colouring, the diffused orange patch of primaries broader. Expanse of wings 1 inch 9 lines.

♀. Wings above white or yellow, markings as in the preceding species; but the orange band broader, the greyish areas darker, the border and band of secondaries much more pronounced, and the undersurface more uniform in colour. Expanse of wings 1 inch 7–10 lines.

♂, Angola (*E. C. Buxton*); ♂ ♀, Congo (*Curror*). Type, B.M.

I believe Felder to have described the female of this species as *T. epigone* ♀.

95. *TERACOLUS OCALE*.

♀. *Anthocharis ocale*, Boisduval, Sp. Gén. Lép. i. p. 584. n. 37 (1836).

Guinea.

Seems allied to the preceding species.

Sc. Apical patch of the female black, rarely enclosing small orange spots.

96. *TERACOLUS ARETHUSA* (*T. EVIPPE*, var.?).

♀ *Papilio arethusa*, Drury, Ill. Exot. Ent. ii. pl. 19. figs. 5 and 6 (1773).

Anthocharis arethusa ♂, Boisduval, Sp. Gén. Lép. i. p. 582. n. 35 (1836).

Callosune arethusa, Kirby, Syn. Cat. p. 504. n. 45 (1871).

Pieris amytis, Godart, Enc. Méth. ix. p. 123. n. 14 (1819).

Pieris evippe ♀, Godart, l. c. p. 122. n. 10 (1819).

♂ ♀, Sierra Leone; ♂, Ashanti; S. Africa (*E. C. Buxton*).

Dr. Boisduval attacks M. Godart for considering this the female of *T. evippe*, Linnæus; it is, however, not improbable that it is only a variety of that species, inasmuch as it chiefly differs from it in the possession of a black dot at the end of the discoidal cell; it certainly is the female of the *A. evippe* of Boisduval; the female described by the latter author is not even nearly related to this species, but is probably identical with, or nearly allied to, *T. gavisia*.

97. TERACOLUS CEBRENE (? = *T. arethusa*, var.).

Anthocharis cebrene, Boisduval, Sp. Gén. Lép. i. p. 583. n. 36 (1836).

Callosune cebrene, Kirby, Syn. Cat. p. 504. n. 47 (1871).

Papilio arethusa, Cramer, Pap. Exot. iii. pl. 210. figs. E, F (1782).

Sierra Leone.

One of our female examples of *T. arethusa* is intermediate between the figures of Drury and Cramer.

98. TERACOLUS EVIPPE.

♂. *Papilio evippe*, Linnæus, Mus. Lud. Ulr. p. 239 (1764); Clerck, Icones, pl. 40. fig. 5 (1764).

Pieris evippe, Godart, Enc. Méth. ix. p. 122. n. 10 (1819).

Anthocharis evippe, Lucas, Lep. Exot. pl. 37. fig. 1 (1835); Boisduval (part), Sp. Gén. Lép. i. p. 573. n. 20 (1836).

♂ ♀, Sierra Leone (*Foxcroft*).

B.M.

This is probably the rarer form of *T. arethusa*; the males of the two forms are almost identical.

9. *Wings white, the primaries of the male, and generally of the female, with broad carmine apical area; underside with a well-marked discal series of subocellate spots.*

99. TERACOLUS CINERESCENS.

Teracolus cinerescens, Butler, Cist. Ent. i. p. 172. n. 53 (1873).

Anthocharis danae, Trimen (*nec* Fabr.), Rhop. Afr. Austr. i. p. 44. n. 27 (1862); Hewitson, Gen. Diurn. Lep. pl. 7. fig. 3 (1847).

♂ ♀, Natal, S. Africa (*E. C. Buxton*); Caffraria. B.M.

Var. *Anthocharis danaë*, Wallengren (*nec* Fabr.), Lep. Rhop. Caffr.

♂ ♀, S. Africa (*E. C. Buxton*).

B.M.

This variety has the basal area of the male less strongly suffused with grey, and the under surface of the secondaries of a creamy colour.

100. TERACOLUS EUPOMPE.

♂ ♀. *Pontia eupompe*, Klug, Symb. Phys. pl. 6. figs. 11-14 (1829).

Anthocharis eupompe, Boisduval, Sp. Gén. Léop. i. p. 571. n. 17 (1836).

Callosune eupompe (part), Kirby, Syn. Cat. p. 501. n. 13 (1871).

♀. *Papilio evippe*, Cramer (nec Linnæus), Pap. Exot. i. pl. 91. figs. D and E (1779).

Anthopsyche theopompe, Felder, Reise der Nov. Lep. ii. p. 183. n. 175 ("1865"); Hopffer, Stett. ent. Zeit. p. 432 (1869).

♂, White Nile (*Petherick*).

B.M.

I have examined both sexes of this species, taken by Mr. J. K. Lord at Akeek (island).

101. TERACOLUS ANTEUPOMPE.

Anthopsyche anteupompe, Felder, Reise der Nov. Lep. ii. p. 184. n. 175 (1865).

Callosune eupompe, Kirby, Syn. Cat. p. 501. n. 14 (1871).

Bogos.

102. TERACOLUS ACASTE.

♀. *Pontia acaste*, Klug, Symb. Phys. pl. 7. figs 16, 17 (1829).

Pieris polycaste, Boisduval, Sp. Gén. Léop. i. p. 525. n. 127 (1836).

Ambukol.

I much doubt whether this female would not be better placed next to *T. halimede*, of which Klug says it may be a variety; it is, I should say, more probable that it is the female of *T. pleione* than a variety of *T. halimede*.

103. TERACOLUS PSEUDACASTE, n. sp. (Plate VI. fig. 11.)

♂ *Anthocharis* (sic) *eupompe*, Lucas, Lep. Exot. pl. 36. fig. 4 (1835).

Underside like *T. cinerescens*, but without the blackish line across the cell of primaries or the orange costa to secondaries. Expanse 1 inch 9 lines.

♀. Very like Klug's figure of *T. acaste*, but larger and darker, the apical area of primaries greyish brown, crossed by a curved series of whitish lanceolate streaks, bounded on the inside by black spots. Wings below like the male of *T. cinerescens*. Expanse of wings 2 inches.

♂ ♀, White Nile (*Petherick*).

Type, B.M.

This species is a link between the *T. eupompe* and *halimede* groups.

104. TERACOLUS DEDECORA.

Anthocharis dedecora, Felder, Reise der Nov. Lep. ii. p. 184. n. 177 ("1865").

Callosune dedecora, Kirby, Syn. Cat. p. 502. n. 15 (1871).

♂ ♀, Senegal.

B.M.

The female forms a link between the *T. eupompe* and *anterippe* groups. It is the *Anthocharis eupompe*, var., of Trimen (Rhop. Afr. Austr. p. 46), but it is ticketed "Seneg.," not S. Africa. The long description is taken from an Indian species, there being no African butterfly to which it will apply.

105. *TERACOLUS WALLENGRENII*, n. sp.

Anthopsyche eupompe, Wallengren (nec Klug), Lep. Rhop. Caffr.

This species has three varieties, differing chiefly in size; it is easily distinguished from *T. cinerescens* by the narrower black edging of the apical crimson or carmine patch of the male, the much more yellow apical patch of the female, the restriction of the grey colouring to the base of the wings, the small size of the marginal spots of secondaries, and the deep reddish buff colouring of the under surface of the secondaries and apex of primaries below. Expanse of wings, ♂ 1 inch 4 to 11 lines, ♀ 1 inch 5 to 9 lines.

N.E. of Natal (14 specimens, *E. C. Buxton*). Type, B.M.

This has, I suspect, been confounded with the Indian *T. danaë*; the latter, however, is more like *T. cinerescens*, its female having the aspect of a very dark form of *T. dedecora*.

106. *TERACOLUS DANAË*.

Papilio danaë, Fabricius, Syst. Ent. p. 476. n. 144 (1775); Donovan, Ins. Ind. pl. 26. fig. 2 (1800).

Pieris danaë, Godart, Enc. Méth. ix. p. 124. n. 20 (1819).

Anthocharis danaë, Boisduval, Sp. Gén. Lép. 1, p. 570. n. 16 (1836).

Calosune danaë, Kirby, Syn. Cat. p. 501. n. 12 (1871).

♂. *Papilio eborea* ♀, Cramer, Pap. Exot. iv. pl. 352. figs. E, F [not C, D], (1782).

♂, Ceylon (*Templeton*, B.M.); Madras, Kurnool, Bombay, Canara, Deccan; ♀, N.W. India (coll. F. Moore).

107. *TERACOLUS DULCIS*, n. sp. (Plate VII. fig. 13.)

♂. Smaller than *T. danaë*, the crimson apical patch narrower and with narrower internal black border; basal grey suffusion not so dark; black marginal spots of secondaries small, and consequently widely separated; wings below altogether paler than in *T. danaë*, the spots fewer and smaller; no black spots at external angle of primaries. Expanse of wings 1 inch 7 to 9 lines.

♀. Differs from the female of *T. danaë* in its altogether paler colour; with darker apical patch, restricted within the angulated transverse postmedian series of black spots, all the black spots much smaller, the marginal spots of secondaries well separated. Expanse of wings 1 inch 6 to 11 lines.

♂ ♀. Kattywar (coll. F. Moore); ♂, N. India (B.M.)

Var. The female paler at base of wings, with the disk of secondaries immaculate.

♂ ♀, Scinde.

Coll. F. Moore.

This species generally stands in Indian collections as the *T. eupompe* of Klug.

108. *TERACOLUS DIRUS*, n. sp. (Plate VII. fig. 11.)

♀. Allied to the preceding and to *T. pseudacaste*. Wings above white, the base broadly dark grey; an irregular series of black spots

through the centre of the disk, large and much interrupted in primaries, small, and terminating in the second median interspace in secondaries: primaries with a well-marked black spot at end of cell; apical area and outer border to external angle brown; the inner margin of apical area scarcely extending beyond the angulated upper portion of the discal series of black spots; a subapical curved series of cream-coloured hastate spots, slightly speckled with scarlet externally, and bounded by the black angulated series: secondaries with a brown border, paler at the internervular folds. Primaries below white, the base broadly sulphur yellow, the apical area pale buff; the four uppermost black spots annular, upon a diffused reddish ground, otherwise as above: secondaries pale buffy whitish; the discal spots of secondaries cordiform, carmine, varied with pearly whitish and black; a spot of the same colours at end of cell. Expanse of wings 2 inches 1 line.

Scinde.

Type, coll. F. Moore.

109. *TERACOLUS EBOREOIDES*, n. sp. (Plate VII. fig. 12.)

♂. Above very like Cramer's figure of male *T. eborea*, but blackish at the base; below very like *T. danaë*, but without the reddish tint round the subapical black spots. Expanse of wings 1 inch 11 lines.

♀. Wings above with the basal third brownish grey: primaries with the centre irregularly white; the apical third dark brown, crossed by four triangular orange spots, bounded internally by black spots; a black spot at the end of the cell; a second constricted spot on interno-median interspace and in the middle of the central white area, and a minute point near the external border; the apical area is deeply bisinuate towards external angle, and decreases in width to the angle: secondaries with a decreasing dark brown border from the apex to the anal angle, slightly intersected with whitish on the internervular folds; the area between the grey part and the outer border white; five black discal spots, and a spot at the end of the cell: wings below as in the male, but slightly deeper in colour. Expanse of wings 1 inch 6 lines.

♂ ♀, India (*W. B. Farr*).

Coll. F. Moore.

The above is a very well-marked species.

110. *TERACOLUS SANGUINALIS*, n. sp.

♂. Much like a small example of *T. danaë*, but the primaries more acuminate, the carmine patch rather brighter; the grey colouring confined to the extreme base and costa, not extending into the secondaries; the marginal spots of secondaries better separated and rather smaller. Apical area of primaries below redder; the angulated series of spots larger and redder; the spots upon the margin near external angle small and indistinct: secondaries white, slightly creamy, with the outer border very feebly ochraceous; the spots, which are arranged as in *T. danaë*, are greyish brown; the spot at end of cell reddish, with a narrow brown margin. Expanse of wings 1 inch 6 lines.

♀. Differs from the female of *T. danaë* in its smaller size, more

sulphur-tinted coloration, the regular and much paler basal grey suffusion, which is almost invisible on the secondaries, the much brighter apical carmine patch, the absence of the spot near external angle of primaries, the minute character of the discal spots of secondaries, and the better-defined and narrower outer border; primaries below with the apical area redder, the basal area yellower, and without a terminal grey streak crossing the cell; the black spots smaller: secondaries below distinctly ochraceous, with the discal spots reddish, irrorated with black and grey. Expanse of wings 1 inch 6 lines.

Ceylon (*Stevens*).

Type, B.M.

10. *Wings white, the primaries with the apex dark brown, with central orange patch, more or less separated into distinct spots in the female; underside with a more or less defined series of discal spots in secondaries.*

111. *TERACOLUS PERNOTATUS*, n. sp. (Plate VII. fig. 1.)

♂. White above, with the base pale grey: primaries with a black spot at end of cell; apical area orange, bordered with black-brown, the inner border tapering towards costa; the orange area divided into six parts by the nervures and narrowing to a point behind: secondaries with a black spot on costa and six on outer margin. Below white, the base sulphur-yellow; the cells terminated by black dots; primaries with the apical area greyish, with the orange patch of the upperside dimly visible and bounded externally by four or five almost united red-brown spots in an oblique series: secondaries with a discal arched series of small brown spots; very minute black spots terminating the nervures on outer margin. Expanse of wings 1 inch 6 lines.

♀. White, sometimes tinted with sulphur-yellow; the base pale grey: primaries with a black spot at end of cell; apical area black, with a central nearly straight series of five more or less defined orange spots, only separated by the nervures; three black spots in an oblique series below the median branches, the central one small, the lowest one bifid: secondaries with a curved series of discal spots, black at costa, but gradually fading away towards inner margin; a marginal series of six large spots. Wings below white, the basal area, apical area of primaries, and outer margin of secondaries bright sulphur-yellow; a black spot at the end of the cells, bordered with orange on the secondaries; primaries with an angulated discal series of seven blackish spots: secondaries with a curved discal series of seven sap-green spots; the abdominal and subcostal areas also sometimes irrorated with sap-green. Expanse of wings 1 inch 7 lines.

♂ ♀, Punjab (coll. F. Moore); ♀, Punjab (B.M.).

This species is distinguished by the broad apical patch of the male; the pale grey basal third of the wings, the greyish apical patch below, and the curved discal series of secondaries below.

112. *TERACOLUS FARRINUS*, n. sp. (Plate VII. fig. 2.)

♂. Distinguished from the preceding by the wider apical area

with narrower orange patch, the basal grey scaling darkest on costa, and of a bluish colour; the apical area below lemon-yellow, the spots on its internal border squamose: secondaries above with larger marginal spots; below with the discal spots less strongly defined, and the base not yellow as in the primaries. Expanse of wings 1 inch 8 lines.

♀. Distinguished by the dark brownish grey scaling over basal third, the larger and better-defined black spots, especially those on the disk of secondaries; the under surface of secondaries clouded with greyish. Expanse of wings 1 inch 7 lines.

♂, Kussowlie, N.W. Himalayas; ♀, India (Farr).

Coll. F. Moore.

This species must have been mixed up with Dr. Boisduval's examples of *T. etrida*, since his description of the female agrees with this form alone; it can never, I think, have come from Madras or Pegu.

113. TERACOLUS PURUS, n. sp. (Plate VII. figs. 14, 15.)

♂. Distinguished from *T. pernotatus* by its purer white coloration, the base in the male scarcely visibly tinted with grey, but in the female as in the above-mentioned species; the apical area almost black, with a narrow regular slightly curved band of five orange spots; only the uppermost and lowermost of the three discal spots visible in the female, and the three uppermost of the discal series of secondaries; black marginal spots of secondaries better defined, rounded: wings below with the base and apex of primaries sulphur-yellow; the female with the whole of the secondaries, excepting the discoidal interspace, more or less tinted with the same colour; only the two uppermost of the discal spots in the secondaries of the male below visible; in the female they are all present, but smaller. Expanse of wings, ♂ 1 inch 3 to 6 lines, ♀ 1 inch 6 to 8 lines.

♂ ♀, Punjab (type, B.M.); ♂ ♀, Punjab (coll. F. Moore).

We have what I believe to be this species also, marked "India;" but the examples are in bad condition.

114. TERACOLUS ETRIDA.

♂. *Anthocharis etrida* (part), Boisduval, Sp. Gén. Lép. i. p. 576. n. 24 (1836).

♀. Like the female of *T. purus*, but rather larger, with the apex more rounded, the primaries above yellowish, the costal and discoidal areas of primaries and outer margin of secondaries below distinctly sulphur-yellow. Expanse of wings 1 inch 7 lines.

♂ ♀, Scinde; ♀, Masuri (Grote); ♂, Canara (typical form).

Coll. F. Moore.

The male has the orange patch broad at costa and tapering to near the second median branch; but it is more readily recognized by the coloration of the under surface of the secondaries, which is white, with yellow diffused outer border; a small black dot at end of cell, and two subcostal pale brown spots near apex: the Canara example has the basicostal area of primaries above darker than in the specimens from Scinde; but in other respects it agrees with them.

very fairly : the female from Masuri more nearly resembles the male, the spots below being very pale.

115. *TERACOLUS LIMBATUS*, n. sp.

♂. Wings above white : the primaries with the extreme base and the costa dark grey ; an elongate triangular apical patch from costa to external angle, enclosing a slightly curved tapering orange patch, separated into six parts by the nervures ; a minute black dot at end of cell : secondaries with the outer margin bordered by a sinuated brown band. Wings below white, with a black dot at the end of each discoidal cell ; the cell of primaries and the apical area sulphur-yellow ; a subapical oblique brownish streak tapering towards the costa ; apical margin greenish grey. Expanse of wings 1 inch 5 lines.

Ceylon (*Templeton*).

Type, B.M.

This is the most distinct-looking of the local forms of *T. etrida* ; it probably ranges to Madras ; for Boisduval says (in his description of *T. etrida*), “Ailes inférieures avec le bord entrecoupé de points noirs, assez gros, isolés ou réunis en une bande crénelée.”

116. *TERACOLUS CASIMIRUS*, n. sp. (Plate VII. fig. 5.)

♂. Wings above white, the base grey, more extended in primaries than in secondaries ; primaries rounded at apex ; the apical area from costa to first median branch black-brown, enclosing a slightly curved orange band, at the end of which is a minute dot of the same colour, the band is divided by the nervures into five parts ; a black dot at the end of the cell : secondaries with four large marginal dark brown spots, and a minute dot of the same colour ; a subapical costal ill-defined brown litura. Primaries below white, the basal two thirds of the cell sulphur-yellow ; apical area pale ochre-yellow, bounded internally by an oblique greyish streak ; a black dot at the end of the cell : secondaries sandy whitish, irrorated with brown ; an arched macular brownish streak from costa to interno-median area (interrupted, as usual, on the discoidal interspace) ; a black and yellow dot at the end of the cell ; outer border yellowish, irrorated with brown atoms. Expanse of wings 1 inch 7 lines.

Bimbur, Cashmere (*Capt. Reed*).

Coll. F. Moore.

117. *TERACOLUS BIMBURA*, Moore. (Plate VII. figs. 3, 4.)

♂. Wings above white, greyish at base : primaries with a triangular orange patch at apex, narrowly bordered with black-brown, the outer border sinuated ; a minute black dot at end of cell : secondaries with four marginal black dots. Primaries below white, the basal three fifths of discoidal cell sulphur-yellow ; apical area greyish stramineous externally, sulphur-yellow internally, bounded within by a well-defined oblique greenish grey bar ; a black dot at the end of the cell : secondaries sandy whitish, basal three fifths densely irrorated with brown, interrupted through the cell and discoidal interspace by a whitish streak, and bounded externally by squamose brown spots ; outer border somewhat yellowish ; a black and yellow dot at the end of the cell. Expanse of wings 1 inch to 1 inch 7 lines.